

**Claims**

1. Use of a liquid crystal composition in a bistable liquid crystal device  
said composition comprising

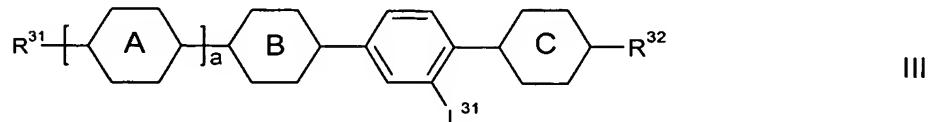
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- at least 30 weight% (based on the total weight of the composition) of a component ( $\alpha$ ) containing one or more compounds having a dielectric anisotropy  $\Delta\epsilon$  of at least 25,  
whereby at least 25 weight% (based on the total weight of the  
10 composition) of said compounds have a dielectric anisotropy  $\Delta\epsilon$  of at least 40; and
- at least 5 weight% (based on the total weight of the composition) of a component ( $\beta$ );

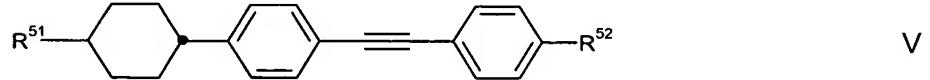
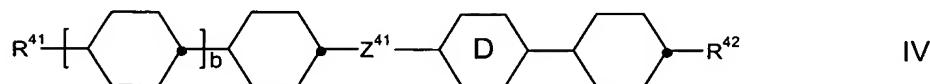
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whereby said component ( $\beta$ ) comprises at least one compound of formula III and/or at least one compound of formula IV and/or at least one compound of formula V and/or at least one compound of formula VI and/or at least one compound of formula VII

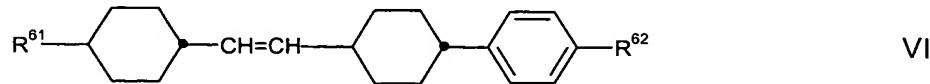
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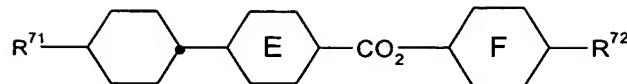


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VII

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in which

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a and b are independently of each other 0 or 1;

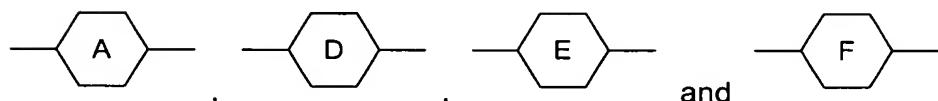
$R^{31}$ ,  $R^{32}$ ,  $R^{41}$ ,  $R^{42}$ ,  $R^{51}$ ,  $R^{52}$ ,  $R^{61}$ ,  $R^{62}$ ,  $R^{71}$  and  $R^{72}$  are independently of each other  $C_1$ - $C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, - $CH=CH$ -, - $C\equiv C$ -, - $CO-O$ -, - $OC-O$ - such that there are no hetero atoms adjacent to each other;

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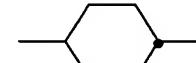
 $L^{31}$  is H or F;

$Z^{41}$  is - $CO-O$ -, - $CH_2O$ -, - $OCH_2$ -, - $CF_2O$ -, - $OCF_2$ -, - $CH_2CH_2$ -, - $CF_2CF_2$ -, - $CH_2CF_2$ -, - $CF_2CH_2$ -, - $CH=CH$ - or - $C\equiv C$ -;

20



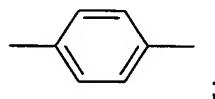
and



or

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are independently of each other



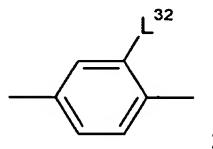
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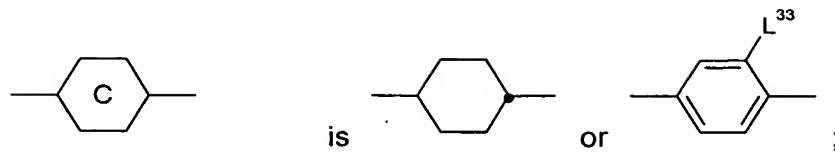
is



or



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in which

$L^{32}$  and  $L^{33}$  are independently of each other H or F.

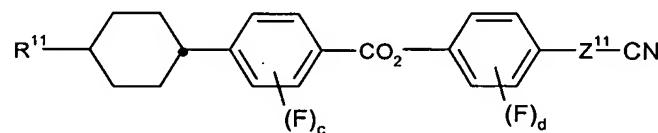
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2. Use of a liquid crystal composition according to claim 1 whereby said bistable liquid crystal device is a zenithal bistable nematic liquid crystal device.

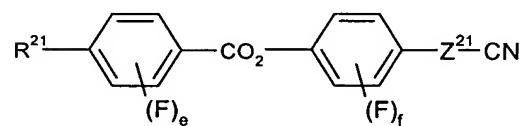
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3. Use of a liquid crystal composition according to any one of claims 1 or 2 whereby said component (a) comprises at least one compound of formula I and/or at least one compound of formula II

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I



II

in which

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c, d, e and f are independently of each other 0, 1, 2, 3 or 4;

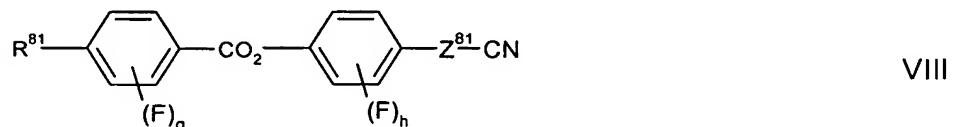
$R^{11}$  is  $C_1-C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by  $-O-$ ,  $-S-$ ,  $-CH=CH-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other;

30

5             $R^{21}$     is  $C_2-C_{15}$  alkenyl which is unsubstituted or mono- or poly- substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, -CH=CH-, -C≡C-, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other;

$Z^{21}$  and  $Z^{21}$  are independently of each other a single bond or -C≡C-.

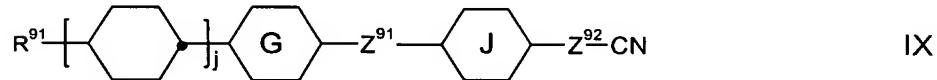
10           4. Use of a liquid crystal composition according to any one of claims 1 to 3 whereby said component ( $\alpha$ ) comprises at least one compound of formula VIII



15           in which  
g and h are independently of each other 0, 1, 2, 3 or 4;  
 $R^{81}$  is  $C_1-C_{15}$  alkyl which is unsubstituted or mono- or poly- substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, -C≡C-, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other;

20            $Z^{81}$  is a single bond or -C≡C-.

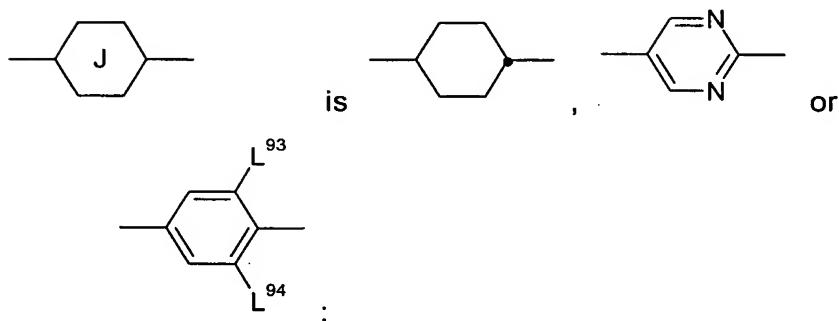
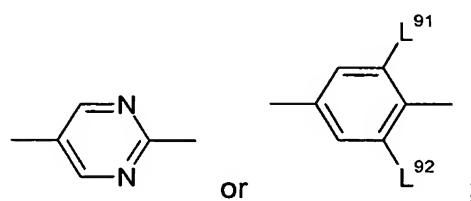
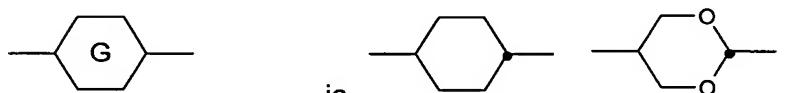
25           5. Use of a liquid crystal composition according to any one of claims 1 to 4 whereby said component ( $\alpha$ ) comprises at least one compound of formula IX



30           in which  
j is 0 or 1;

5            R<sup>91</sup>    is C<sub>1</sub>-C<sub>15</sub> alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the CH<sub>2</sub> groups may be replaced by -O-, -S-, -CH=CH-, -C≡C-, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other;

10            Z<sup>91</sup> and Z<sup>92</sup>    are independently of each other a single bond or -C≡C-;



in which

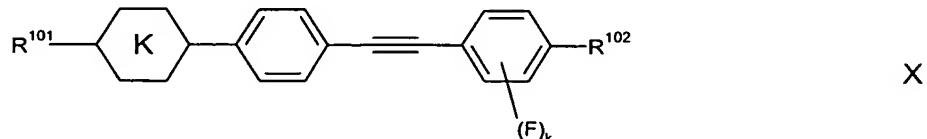
25            L<sup>91</sup>, L<sup>92</sup>, L<sup>93</sup> and L<sup>94</sup>    are independently of each other H or F.

30            6. Use of a liquid crystal composition according to any one of claims 1 to 5 whereby said liquid crystal composition further comprises

- at least 3 weight% (based on the total weight of the composition) of a component ( $\gamma$ ) containing one or more compounds having an optical anisotropy  $\Delta n$  of at least 0.20.

7. Use of a liquid crystal composition according to claim 6 whereby said component ( $\gamma$ ) comprises at least one compound of formula X

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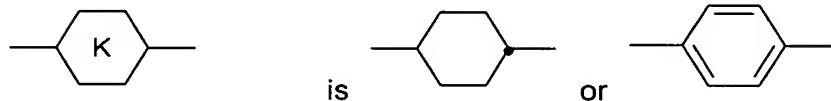
in which

k is 0, 1, 2, 3 or 4;

10

R<sup>101</sup> and R<sup>102</sup> are independently of each other C<sub>1</sub>-C<sub>15</sub> alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the CH<sub>2</sub> groups may be replaced by -O-, -S-, -CH=CH-, -C≡C-, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other; and

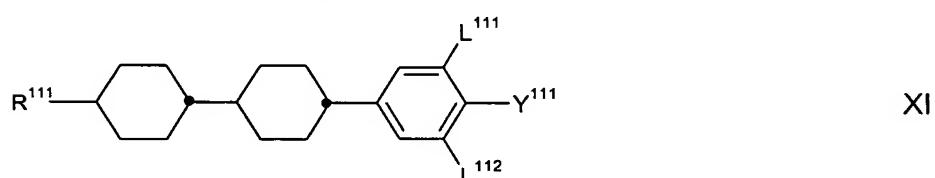
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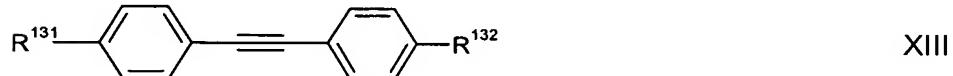
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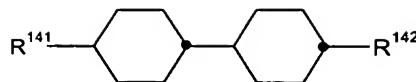
8. Use of a liquid crystal composition according to any one of claims 1 to 7 whereby said liquid crystal composition further comprises at least one compound of formula XI and/or at least one compound of formula XII and/or at least one compound of formula XIII at least one compound of formula XIV

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XIV

in which

5      R<sup>111</sup> and R<sup>142</sup>      are independently of each other C<sub>2</sub>-C<sub>15</sub> alkenyl  
       which is unsubstituted or mono- or poly-substituted with CN or  
       halogen and in which one or more of the CH<sub>2</sub> groups may be  
       replaced independently of each other by -O-, -S-, -CH=CH-,  
       -C≡C-, -CO-O-, -OC-O- such that there are no hetero atoms  
       adjacent to each other;

10     R<sup>121</sup>, R<sup>131</sup>, R<sup>132</sup> and R<sup>141</sup>    are independently of each other C<sub>1</sub>-C<sub>15</sub>  
       alkyl which is unsubstituted or mono- or poly-substituted with  
       CN or halogen and in which one or more of the CH<sub>2</sub> groups  
       may be replaced independently of each other by -O-, -S-,  
       -CH=CH-, -C≡C-, -CO-O-, -OC-O- such that there are no  
       hetero atoms adjacent to each other;

15     R<sup>122</sup>    is C<sub>1</sub>-C<sub>15</sub> alkyl which is unsubstituted or mono- or poly-  
       substituted with halogen and in which one or more of the CH<sub>2</sub>  
       groups may be replaced independently of each other by -O-,  
       -S-, -CH=CH-, -C≡C-, -CO-O-, -OC-O- such that there are no  
       hetero atoms adjacent to each other;

20     Y<sup>111</sup>    is F, Cl, C<sub>1</sub>-C<sub>15</sub> alkanyl or C<sub>2</sub>-C<sub>15</sub> alkenyl that are  
       independently of each other mono- or poly-substituted with  
       halogen, or C<sub>1</sub>-C<sub>15</sub> alkoxy, which is mono- or poly-substituted  
       with halogen;

25     L<sup>111</sup> and L<sup>112</sup>    are independently of each other H or F; and  
       and are independently of each other  
       or are independently of each other

30     or <img alt="Chemical structure YY: A benzene ring with an YY label at the 1-position and two methyl groups at the 2 and

9. Use of a liquid crystal composition according to any one of claims 1 to 8 whereby said liquid crystal composition comprises at least 50 weight% (based on the total weight of the composition) of said component ( $\alpha$ ).

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10. Use of a liquid crystal composition according to any one of claims 1 to 9 whereby said liquid crystal composition comprises at least 50 weight% (based on the total weight of the composition) of said component ( $\alpha$ ) whereby at least 30 weight% (based on the total weight of the composition) of said compounds have a dielectric anisotropy  $\Delta\epsilon$  of at least 40.

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11. Use of a liquid crystal composition according to any one of claims 1 to 10 whereby said liquid crystal composition comprises at least one compound of formula II of said component ( $\alpha$ ) and at least 8 weight% (based on the total weight of the composition) of said component ( $\beta$ ).

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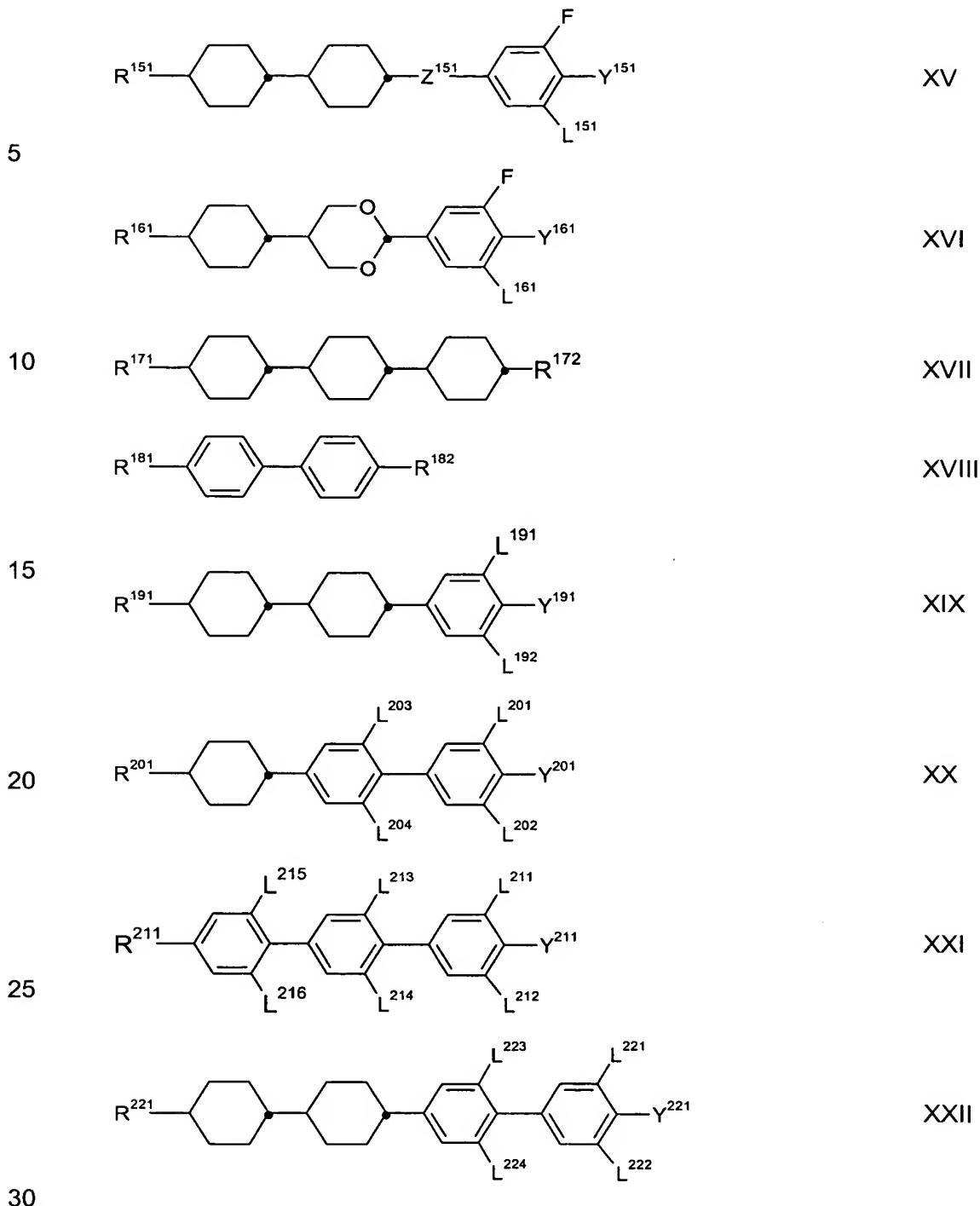
12. Use of a liquid crystal composition according to any one of claims 6 to 11 whereby said liquid crystal composition comprises at least 5 weight% (based on the total weight of the composition) of said component ( $\gamma$ ).

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13. Use of a liquid crystal composition according to any one of claims 1 to 12 whereby said liquid crystal composition comprises at least one compound of formula XV and/or of formula XVI and/or XVII and/or of formula XVIII and/or of formula XIX and/or of formula XX and/or of formula XXI and/or of formula XXII:

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in which

$R^{151}$ ,  $R^{161}$ ,  $R^{171}$ ,  $R^{172}$ ,  $R^{181}$ ,  $R^{182}$ ,  $R^{201}$ ,  $R^{211}$  and  $R^{221}$

are independently of each other C<sub>1</sub>-C<sub>15</sub> alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the CH<sub>2</sub> groups may be replaced independently of each other by -O-, -S-, -CH=CH-, -C≡C-, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other;

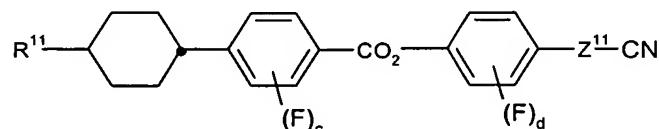
$R^{191}$  is  $C_1-C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by  $-O-$ ,  $-S-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other:

$Y^{151}$ ,  $Y^{161}$ ,  $Y^{191}$ ,  $Y^{201}$ ,  $Y^{211}$  and  $Y^{221}$  are independently of each other F, Cl, C<sub>1</sub>-C<sub>15</sub> alkanyl or C<sub>2</sub>-C<sub>15</sub> alkenyl that are independently of each other mono- or poly-substituted with halogen, or C<sub>1</sub>-C<sub>15</sub> alkoxy, which is mono- or poly-substituted with halogen;

$L^{151}$ ,  $L^{161}$ ,  $L^{191}$ ,  $L^{192}$ ,  $L^{201}$ ,  $L^{202}$ ,  $L^{203}$ ,  $L^{204}$ ,  $L^{211}$ ,  $L^{212}$ ,  $L^{213}$ ,  $L^{214}$ ,  $L^{215}$ ,  $L^{216}$ ,  $L^{221}$ ,  $L^{222}$ ,  $L^{223}$  and  $L^{224}$  are independently of each other H or F; and  $Z^{151}$  is  $-CO-O-$ ,  $CH_2O$  or  $CF_2O$ .

#### 14. Liquid crystal medium comprising

- at least one compound of formula I

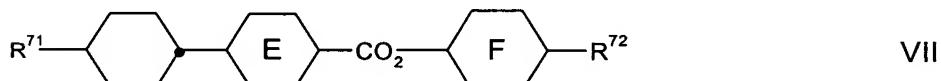
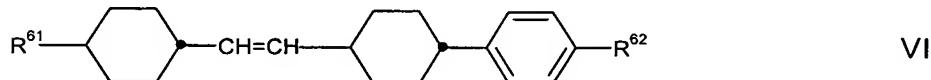
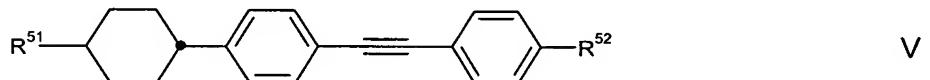
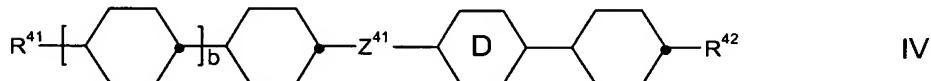
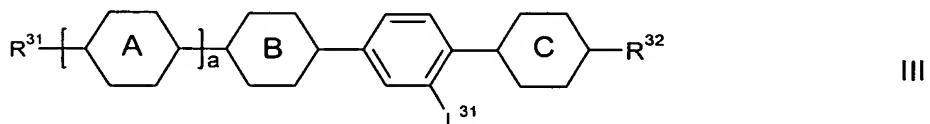


30 c and d are independently of each other 0, 1, 2, 3 or 4;

5             $R^{11}$     is  $C_1$ - $C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, - $CH=CH$ -, - $C\equiv C$ -, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other; and

10             $Z^{11}$     is a single bond or - $C\equiv C$ -.

- at least one compound of formula III and/or at least one compound of formula IV and/or at least one compound of formula V and/or at least one compound of formula VI and/or at least one compound of formula VII



in which

25            a and b    are independently of each other 0 or 1;

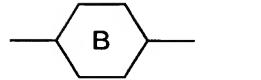
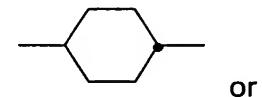
30             $R^{31}$ ,  $R^{32}$ ,  $R^{41}$ ,  $R^{42}$ ,  $R^{51}$ ,  $R^{52}$ ,  $R^{61}$ ,  $R^{62}$ ,  $R^{71}$  and  $R^{72}$     are independently of each other  $C_1$ - $C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, - $CH=CH$ -, - $C\equiv C$ -, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other; and

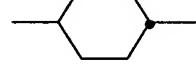
5  $L^{31}$  is H or F;

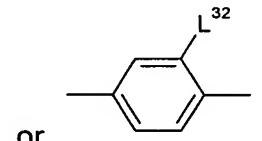
$Z^{41}$  is  $-CO-O-$ ,  $-CH_2O-$ ,  $-OCH_2-$ ,  $-CF_2O-$ ,  $-OCF_2-$ ,  $-CH_2CH_2-$ ,  
 $-CF_2CF_2-$ ,  $-CH_2CF_2-$ ,  $-CF_2CH_2-$ ,  $-CH=CH-$  or  $-C\equiv C-$ ;

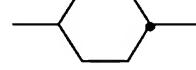


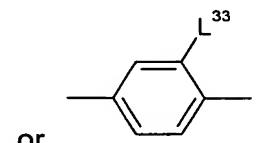
are independently of each other



is 



is 

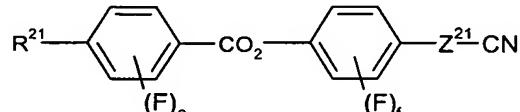


in which

20  $L^{32}$  and  $L^{33}$  are independently of each other H or F.

15. Liquid crystal medium comprising

- at least one compound of formula II



II

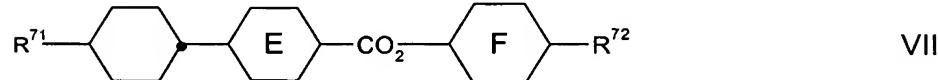
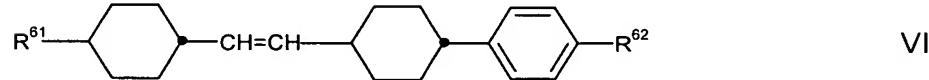
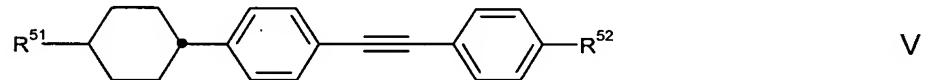
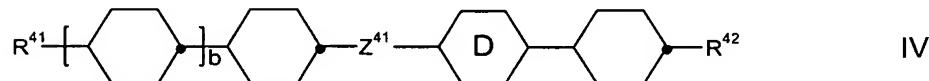
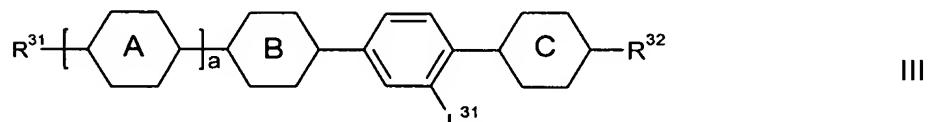
in which

e and f are independently of each other 0, 1, 2, 3 or 4;

5             $R^{21}$     is  $C_2$ - $C_{15}$  alkenyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by  $-O-$ ,  $-S-$ ,  $-CH=CH-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other;

10             $Z^{21}$     is a single bond or  $-C\equiv C-$ .

- at least one compound of formula III and/or at least one compound of formula IV and/or at least one compound of formula V and/or at least one compound of formula VI and/or at least one compound of formula VII



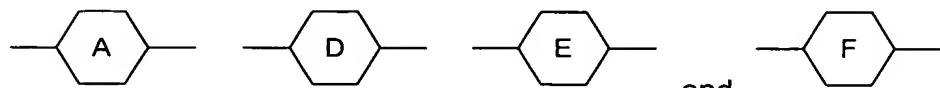
in which

25            a and b    are independently of each other 0 or 1;

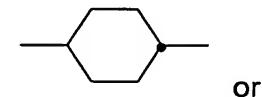
30             $R^{31}$ ,  $R^{32}$ ,  $R^{41}$ ,  $R^{42}$ ,  $R^{51}$ ,  $R^{52}$ ,  $R^{61}$ ,  $R^{62}$ ,  $R^{71}$  and  $R^{72}$     are independently of each other  $C_1$ - $C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by  $-O-$ ,  $-S-$ ,  $-CH=CH-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other; and

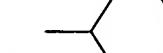
5  $L^{31}$  is H or F;

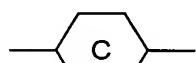
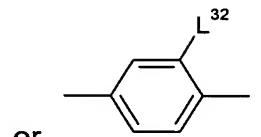
$Z^{41}$  is  $-CO-O-$ ,  $-CH_2O-$ ,  $-OCH_2-$ ,  $-CF_2O-$ ,  $-OCF_2-$ ,  $-CH_2CH_2-$ ,  
 $-CF_2CF_2-$ ,  $-CH_2CF_2-$ ,  $-CF_2CH_2-$ ,  $-CH=CH-$  or  $-C\equiv C-$ ;

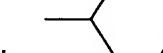


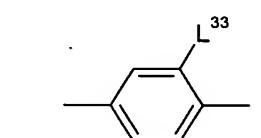
15 are independently of each other



is 



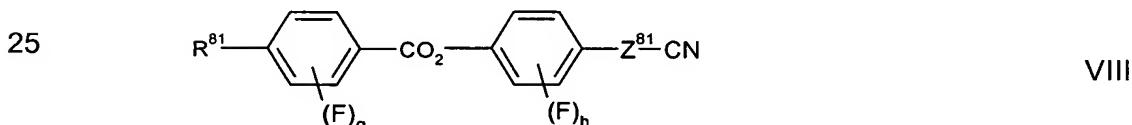
is 



in which

20  $L^{32}$  and  $L^{33}$  are independently of each other H or F.

16. Liquid crystal medium according to any one of claims 14 or 15 characterized in that said medium further comprises at least one compound of formula VIII



g and h are independently of each other 0, 1, 2, 3 or 4;

5           R<sup>81</sup>       is C<sub>1</sub>-C<sub>15</sub> alkyl which is unsubstituted or mono- or poly-  
                  substituted with CN or halogen and in which one or more of  
                  the CH<sub>2</sub> groups may be replaced independently of each other  
                  by -O-, -S-, -C≡C-, -CO-O-, -OC-O- such that there are no  
                  hetero atoms adjacent to each other;  
          Z<sup>81</sup>        is a single bond or -C≡C-.

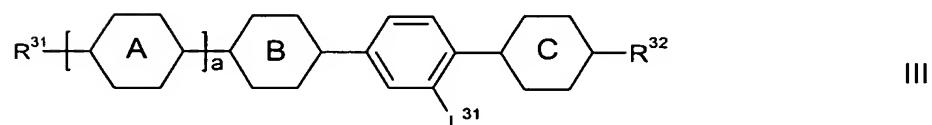
17. Bistable liquid crystal device comprising

10           ■ two outer substrates which, together with a frame, form a cell;  
          ■ a liquid crystal composition present in said cell;  
          ■ electrode structures with alignment layers on the inside of said  
            outer substrates whereby at least one alignment layer comprises  
            an alignment grating that permits the compounds of said liquid  
            crystal composition to adopt at least two different stable states  
15           whereby the assembly of said electrode structures with said  
            alignment layers being such that a switching between the said at  
            least two different stable states is achieved by applying suitable  
            electric signals to said electrode structures;  
          ■ whereby said liquid crystal composition comprises  
20            • at least 30 weight% (based on the total weight of the  
            composition) of a component ( $\alpha$ ) containing one or more  
            compounds having a dielectric anisotropy  $\Delta\epsilon$  of at least 25,  
            whereby at least 25 weight% (based on the total weight of  
            the composition) of said compounds have a dielectric  
25           anisotropy  $\Delta\epsilon$  of at least 40; and

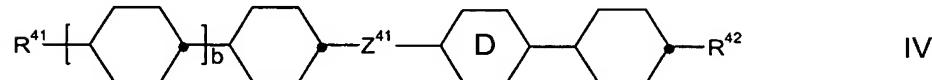
- at least 5 weight% (based on the total weight of the composition) of a component ( $\beta$ );  
 whereby said component ( $\beta$ ) comprises at least one compound of formula III and/or at least one compound of formula IV and/or at least one compound of formula V and/or at least one compound of formula VI and/or at least one compound of formula VII

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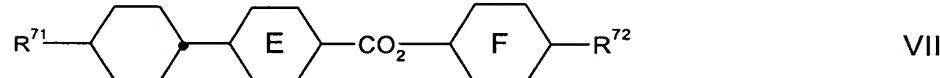
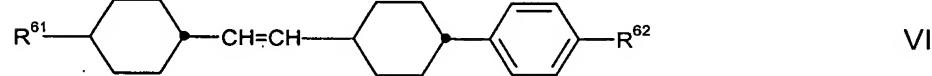
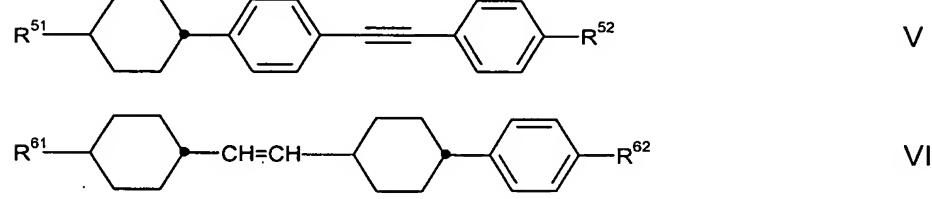
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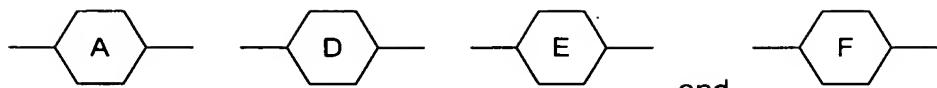
in which

a and b are independently of each other 0 or 1;

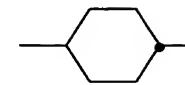
$R^{31}$ ,  $R^{32}$ ,  $R^{41}$ ,  $R^{42}$ ,  $R^{51}$ ,  $R^{52}$ ,  $R^{61}$ ,  $R^{62}$ ,  $R^{71}$  and  $R^{72}$  are independently of each other  $C_1-C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by  $-O-$ ,  $-S-$ ,  $-CH=CH-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other; and

$L^{31}$  is H or F;

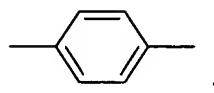
$Z^{41}$  is  $-CO-O-$ ,  $-CH_2O-$ ,  $-OCH_2-$ ,  $-CF_2O-$ ,  $-OCF_2-$ ,  $-CH_2CH_2-$ ,  $-CF_2CF_2-$ ,  $-CH_2CF_2-$ ,  $-CF_2CH_2-$ ,  $-CH=CH-$  or  $-C\equiv C-$ ;



and



or



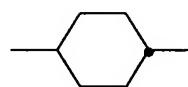
;

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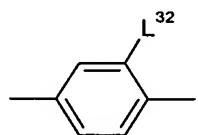
are independently of each other



is

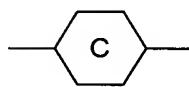


or

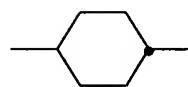


;

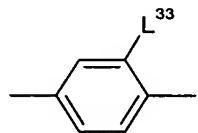
10



is



or



;

15

in which

 $L^{32}$  and  $L^{33}$ 

are independently of each other H or F.

18. Bistable liquid crystal device according to claim 17 whereby

20

- said device is a zenithal bistable nematic liquid crystal device; and

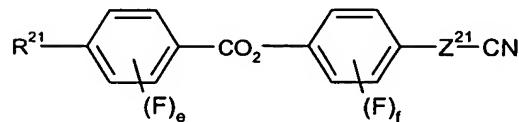
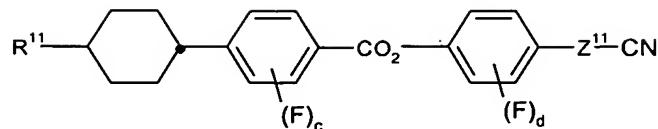
25

- said electrode structures with alignment layers on the inside of said outer substrates have at least one alignment layer that comprises an alignment grating that permits the compounds of said liquid crystal composition to adopt at least two different stable states with different pretilt angles in the same azimuthal plane.

19. Bistable liquid crystal device according to any one of claims 17 or 18

30

whereby said component ( $\alpha$ ) comprises at least one compound of formula I and/or at least one compound of formula II



in which

15

c, d, e and f are independently of each other 0, 1, 2, 3 or 4;

20

$R^{11}$  is  $C_1-C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by  $-O-$ ,  $-S-$ ,  $-CH=CH-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other;

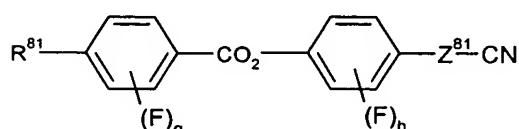
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$R^{21}$  is  $C_2-C_{15}$  alkenyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by  $-O-$ ,  $-S-$ ,  $-CH=CH-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other;

30

$Z^{11}$  and  $Z^{21}$  are independently of each other a single bond or  $-C\equiv C-$ .

20. Bistable liquid crystal device according to any one of claims 18 to 19 whereby said component (a) comprises at least one compound of formula VIII



VIII

in which

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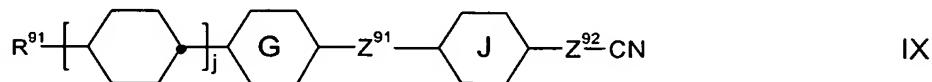
g and h are independently of each other 0, 1, 2, 3 or 4;

5             $R^{81}$     is  $C_1-C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by  $-O-$ ,  $-S-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other;

10             $Z^{81}$     a single bond or  $-C\equiv C-$ .

21. Bistable liquid crystal device according to any one of claims 17 to 20 whereby said component (a) comprises at least one compound of

10            formula IX

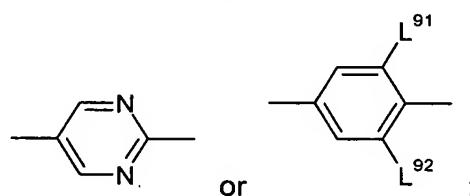
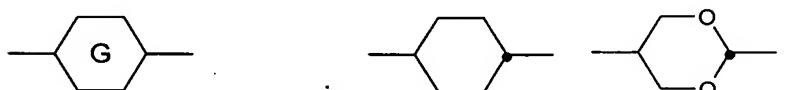


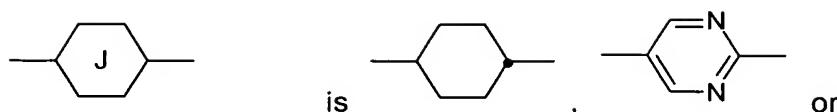
in which

15             $j$     is 0 or 1;

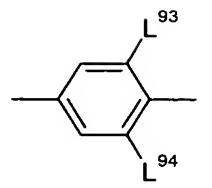
20             $R^{91}$     is  $C_1-C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced by  $-O-$ ,  $-S-$ ,  $-CH=CH-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other;

25             $Z^{91}$  and  $Z^{92}$     are independently of each other a single bond or  $-C\equiv C-$ ;





5



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in which  
 $L^{91}$ ,  $L^{92}$ ,  $L^{93}$  and  $L^{94}$  are independently of each other H or F.

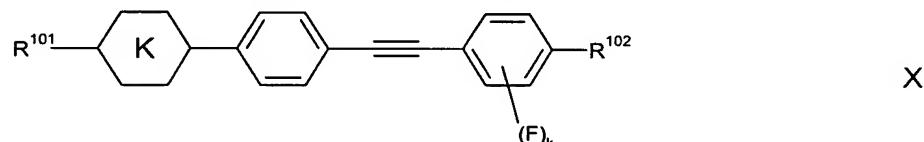
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22. Bistable liquid crystal device according to any one of claims 17 to 21 whereby said liquid crystal composition further comprises

- at least 3 weight% (based on the total weight of the composition) of a component ( $\gamma$ ) containing one or more compounds having an optical anisotropy  $\Delta n$  of at least 0.20.

23. Bistable liquid crystal device according to claim 22 whereby said component ( $\gamma$ ) comprises at least one compound of formula X

20



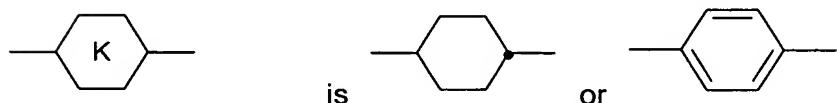
in which

$k$  is 0, 1, 2, 3 or 4;

25

$R^{101}$  and  $R^{102}$  are independently of each other  $C_1-C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced by  $-O-$ ,  $-S-$ ,  $-CH=CH-$ ,  $-C\equiv C-$ ,  $-CO-O-$ ,  $-OC-O-$  such that there are no hetero atoms adjacent to each other; and

30



24. Bistable liquid crystal device according to any one of claims 17 to 23 whereby said liquid crystal composition further comprises at least one compound of formula XI and/or at least one compound of formula XII and/or at least one compound of formula XIII and/or at least one compound of formula XIV

5

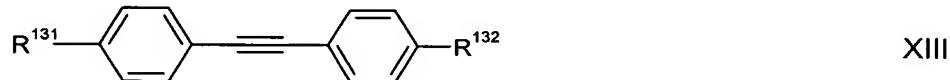
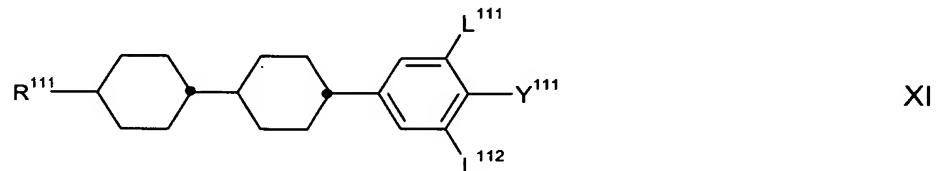
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in which

$R^{111}$  and  $R^{142}$  are independently of each other  $C_2$ - $C_{15}$  alkenyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, - $CH=CH$ -, - $C\equiv C$ -, - $CO-O$ -, - $OC-O$  such that there are no hetero atoms adjacent to each other;

$R^{121}$ ,  $R^{131}$ ,  $R^{132}$  and  $R^{141}$  are independently of each other  $C_1$ - $C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, - $CH=CH$ -, - $C\equiv C$ -, - $CO-O$ -, - $OC-O$  such that there are no hetero atoms adjacent to each other;

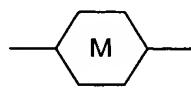
5             $R^{122}$  is  $C_1-C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, -CH=CH-, -C≡C-, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other;

10           $Y^{111}$  is F, Cl,  $C_1-C_{15}$  alkanyl or  $C_2-C_{15}$  alkenyl that are independently of each other mono- or poly-substituted with halogen, or  $C_1-C_{15}$  alkoxy, which is mono- or poly-substituted with halogen;

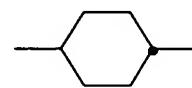
15           $L^{111}$  and  $L^{112}$  are independently of each other H or F; and



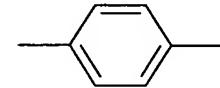
and



are independently of each other



or



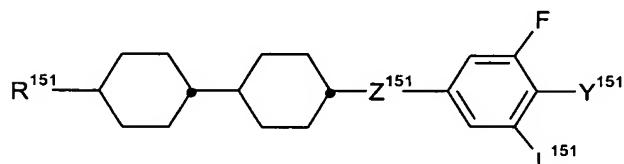
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25. Bistable liquid crystal device according to any one of claims 17 to 24 whereby said liquid crystal composition comprises at least 50 weight% (based on the total weight of the composition) of said component ( $\alpha$ ).
20. Bistable liquid crystal device according to any one of claims 17 to 25 whereby said liquid crystal composition comprises at least 50 weight% (based on the total weight of the composition) of said component ( $\alpha$ ) whereby at least 30 weight% (based on the total weight of the composition) of said compounds have a dielectric anisotropy  $\Delta\epsilon$  of at least 40.
25. Bistable liquid crystal device according to any one of claims 17 to 26 whereby said liquid crystal composition comprises at least one compound of formula II of said component ( $\alpha$ ) and at least 8 weight% (based on the total weight of the composition) of said component ( $\beta$ ).
- 30.

28. Bistable liquid crystal device according to any one of claims 22 to 27 whereby said liquid crystal composition comprises at least 5 weight% (based on the total weight of the composition) of said component ( $\gamma$ ).

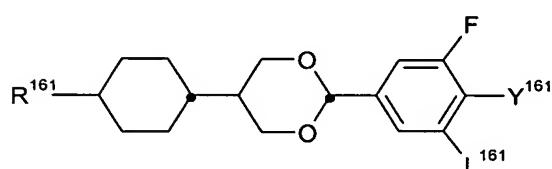
5 29. Bistable liquid crystal device according to any one of claims 17 to 28 whereby said liquid crystal composition comprises at least one compound of formula XV and/or of formula XVI and/or XVII and/or of formula XVIII and/or of formula XIX and/or of formula XX and/or of formula XXI and/or of formula XXII:

10



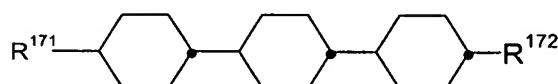
XV

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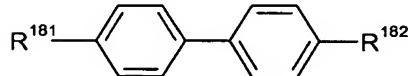
XVI

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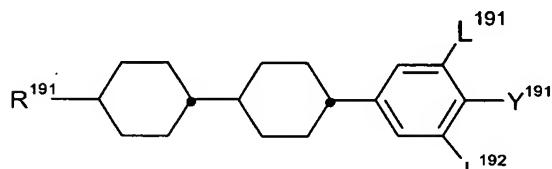
XVII

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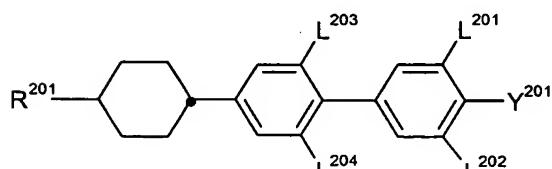
XVIII

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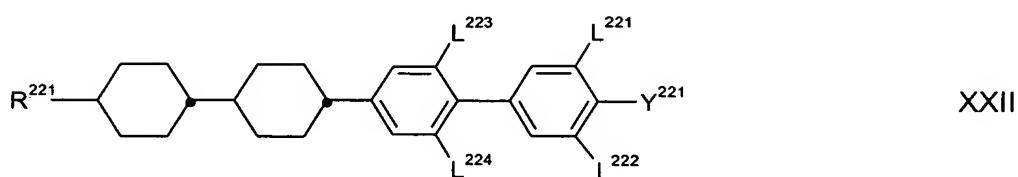
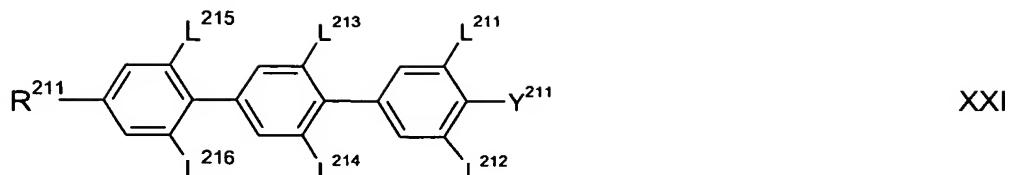


XIX

30



XX



in which

10       $R^{151}$ ,  $R^{161}$ ,  $R^{171}$ ,  $R^{172}$ ,  $R^{181}$ ,  $R^{182}$ ,  $R^{201}$ ,  $R^{211}$  and  $R^{221}$  are independently of each other  $C_1$ - $C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, - $CH=CH$ -, - $C\equiv C$ -, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other;

15       $R^{191}$  is  $C_1$ - $C_{15}$  alkyl which is unsubstituted or mono- or poly-substituted with CN or halogen and in which one or more of the  $CH_2$  groups may be replaced independently of each other by -O-, -S-, - $C\equiv C$ -, -CO-O-, -OC-O- such that there are no hetero atoms adjacent to each other (i.e.  $R^{191}$  does not represent an alkenyl radical);

20       $Y^{151}$ ,  $Y^{161}$ ,  $Y^{191}$ ,  $Y^{201}$ ,  $Y^{211}$  and  $Y^{221}$  are independently of each other F, Cl,  $C_1$ - $C_{15}$  alkanyl or  $C_2$ - $C_{15}$  alkenyl that are independently of each other mono- or poly-substituted with halogen, or  $C_1$ - $C_{15}$  alkoxy which is mono- or poly-substituted with halogen;

25       $L^{151}$ ,  $L^{161}$ ,  $L^{191}$ ,  $L^{192}$ ,  $L^{201}$ ,  $L^{202}$ ,  $L^{203}$ ,  $L^{204}$ ,  $L^{211}$ ,  $L^{212}$ ,  $L^{213}$ ,  $L^{214}$ ,  $L^{215}$ ,  $L^{216}$ ,  $L^{221}$ ,  $L^{222}$ ,  $L^{223}$  and  $L^{224}$  are independently of each other H or F; and

30       $Z^{151}$  is -CO-O-,  $CH_2O$  or  $CF_2O$ .